

# Preface

This book is the eleventh in the series of *Advances in Robot Kinematics*. All the articles contained within it have been rigorously selected on the basis of a peer-review process. Since the early 1990s these books on *Advances in Robot Kinematics* have been published every two years, with the publication of each one being followed by a symposium in which the participants exchange their results and opinions. In our eyes, however, all the books represent stand-alone contributions. They are, in principle, independent of the symposia and should not be thought of as simply standard conference proceedings. The articles they contain are a selection that describes the newest and most original achievements in the field and are, from this perspective, identical to a special issue of a scientific journal. In order to guarantee that we have included the latest results, the whole process – from the submission, the reviewing, the selection of the articles, the various revisions, the preparation of the finished articles and the publication of the book – has taken less than six months.

Although one might expect that the research in robot kinematics has lost a little of its “freshness”, it is clear that even after 24 years, since the first symposium on *Advances in Robot Kinematics* took place, the subject still presents an immense number of research challenges. The success of the symposia is due to the fact that since its earliest beginnings it has managed to bring together the best of the world’s researchers and scientists. The activity as a whole has been continuously supported by the J. Stefan Institute, and since 1992 it has come under the patronage of the International Federation for the Promotion of Mechanism and Machine Science (IFToMM). The last symposium was organized in collaboration with the University of Innsbruck, which made available its infrastructure and workforce and led most of the scientific activities.

The 56 articles in this book cover the latest topics and methods in the kinematics of robotic systems, including serial, parallel and cable driven, both planar and spatial. The robotic systems range from being less than fully mobile to kinematically redundant and to over-constrained. Emerging areas, such as the design and control of humanoids or their subsystems, man and machine systems, as well as the motion of the human body, are also included.

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